National Institute of Environmental Health Sciences

Quantification of the heat wave effect on mortality in nine French cities during summer 2006

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Year: 2012
Journal: PLoS Currents. 4: RRN1307

Abstract:

Background: July 2006 was the first major heat wave in France after the creation of a heat prevention plan. Understanding its impacts on health will help improving the efficiency of this plan. We assessed the mortality impact of the heat wave, and investigated the influence of the heat prevention plan. Methods: The study focused on nine French cities. A Poisson regression model was used to analyze the correlation between temperature, air quality and mortality. An additional spline of time was introduced to capture an additional heat wave effect. Heat-action days defined by the prevention plan were introduced as a dummy variable. Results: 411 extra deaths were observed in the nine cities during the 2006 heat wave. Unlike the 2003 heat wave, no additional heat wave effect was observed in 2006. The maximum daily relative risk of mortality varied from 1.45 in Strasbourg (IC 95% [1.01-2.08]) to 1.04 in Lille (IC 95% [0.92-1.18]). The impact on mortality of the implementation of heat-action days was non-significant and highly variable depending on the cities, with a combined excess of relative risk of -3.3% (IC 95% [-10.3%; 4.4%]). Conclusions: Although no specific heat wave effect was observed, warm temperatures and air pollution were still responsible for a significant excess mortality in France. The absence of a specific heat wave effect may be partly explained by the prevention plan. It may also indicate that higher temperatures are required to observe a mortality outburst.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289125

Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Ozone

Temperature: Extreme Heat

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : France

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified